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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/611,732	07/01/2003	Aoi Tanaka	10059-471US (P31327-01)	7365

570 7590 04/11/2006

AKIN GUMP STRAUSS HAUER & FELD L.L.P.
ONE COMMERCE SQUARE
2005 MARKET STREET, SUITE 2200
PHILADELPHIA, PA 19103

EXAMINER

KALAFUT, STEPHEN J

ART UNIT	PAPER NUMBER
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1745

DATE MAILED: 04/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/611,732	Applicant(s) TANAKA ET AL.	
	Examiner Stephen J. Kalafut	Art Unit 1745	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 February 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 and 6 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1 and 2 are rejected under 35 U.S.C. 102(b) as being anticipated by Bevers (US 5,738,905), for reasons of record.

Claims 3, 4 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bevers in view of Sompalli *et al.* (US 6,524,736).

Applicant's arguments filed 02 February 2006 have been fully considered but they are not persuasive.

Applicants argue, "Figure 8 in Bevers does not show or disclose that the layers are compressed as the other layers are pressed onto the existing layers". Bevers teaches that the copier drums (10 and 12) apply pressure to the catalytic layer (column 6, lines 17-23). Since the operation shown in figure 8 is achieved by repeating the procedure shown in figures 1-5 (column 6, lines 23-31), each of the catalyst sub-layers (50, 50a, 50b) would be applied by these drums, thus undergoing the pressure applied thereby. Thus, Bevers does disclose compression applied to the catalyst sub-layers.

Applicants argue that the melting disclosed by Bevers would not affect the density of his catalyst sub-layers, and that melting would cause the components to expand and thus have a lower density. The latter argument ignores the fact that the melting, and any resulting thermal expansion, would be temporary, the final product being a solid composite, and the fact that the combination of melting and pressure would cause the melted material to move into the voids of the porous composite. This would cause the overall material to have a greater density. The flow

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of melted material into the voids would differ in degree from one sub-layer to the next, due to the difference in the degree of melting, thus causing different degrees of density for the sub-layers.

Applicants argue that there is no difference of sub-layer thickness shown in figure 8. The drawings are not indicated as being to scale, to the relative illustrated sizes of the sub-layers in the figure are not relevant.

Applicants argue that the use of rollers for pressing any harder than necessary to apply a layer would cause the layer to spread outward, beyond the perimeter of the membrane to which it is applied. Bevers teaches that the application of catalytic powder is preferably carried out “in a surface region with a defined outer contour” (column 2, lines 26-29), thus teaching away from allowing the catalyst to spread beyond the perimeter of the membrane.

Applicants argue that Sompalli *et al.* disclose only the application of one layer, and never a plurality of layers. Bevers teaches the application of one layer, or a plurality thereof. Thus, teachings pertaining to the deposition of one layer, when applied to Bevers, would be relevant with respect to the application either of one layer or of several layers.

Applicants argue that there is no motivation to combine Bevers and Sompalli *et al.* because Bevers uses a roller and Sompalli *et al.* use decals. The fact that there are differences between references does not preclude their mutual relevance. As stated in the first office action, the catalyst of Bevers may be applied while wet (column 5, lines 32-35), creating the need to afterwards remove the solvent. The method of Sompalli *et al.* permits the evaporation of any solvent used to apply a catalyst (column 7, lines 60-66). For this reason, the teachings of the two references are relevant to each other.

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Regarding the arguments that Sompalli *et al.* do not remedy the deficiencies of Bevers, as stated above, Bevers would disclose a catalytic electrode having plural sub-layers therein, with density varying between them.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Applicant's amendments to the specification have removed the previously noted informalities.

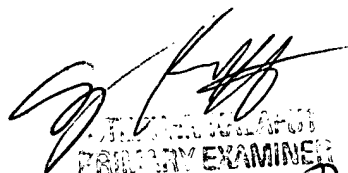
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen J. Kalafut whose telephone number is 571-272-1286. The examiner can normally be reached on Mon-Fri 8:00 am-4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick J. Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

sjk


TECHNOLOGY
PATENT EXAMINER
GROUP 1700